

Regulation of the reactor inlet temperature in the preparation of methylamines

Abstract

The invention relates to a process for preparing methylamines by gas-phase reaction of methanol and ammonia as starting materials at a pressure in the range from 15 to 30 bar in the presence of heterogeneous catalyst. The starting materials are vaporized in one or more heat exchangers (1, 2, 3), superheated to produce a feed gas stream and subsequently fed into a reactor (4), with the mixing of the starting materials being able to be carried out in the feed stream to one of the heat exchangers (1, 2, 3) or at any desired position in a heat exchanger (1, 2, 3). A product gas stream comprising monomethylamine, dimethylamine and trimethylamine and also reaction by-products is taken off from the reactor (4). To control the reactor inlet temperature of the starting materials to a temperature in the range from 360°C to 370°C, all or some of the feed gas stream or the product gas stream is passed through an adjustable valve (5) in order to vary the pressure and thus the condensation temperature.

(Figure 1)